Amendments to the Claims

1. (Previously presented) An air cushion immersion control system comprising:

an air chamber sensor including an air chamber, a bottom out sensor and an overinflation sensor;

an air pump to inflate the air chamber, an air valve to release air from the air chamber;

means to connect the air chamber sensor of the air cushion control system to an air cushion; and

a microprocessor monitoring the bottom out sensor and the over inflation sensor, the microprocessor controlling the air pump and the air valve to adjust a depth of immersion of an individual into the air cushion by the inflation and the release of the air from the air chamber sensor and the air cushion.

2. (Previously presented) The air cushion immersion control system according to claim 1, wherein a housing contains the air pump, the air valve, the microprocessor, the bottom out sensor, the over inflation sensor, the air chamber sensor, and batteries.

3. (Previously presented) The air cushion immersion control system according to claim 2, wherein the air chamber sensor connects to the housing by air tubes or air connects.

4. (Currently Amended) The air cushion immersion control system according to claim 1, wherein the microprocessor performs a timing sequence that measures a duration that the air

cushion is in a bottom-out condition ~~or is in an over-inflation condition~~ without an audible or a visible alarm being activated.

5. (Currently Amended) The air cushion immersion control system according to claim 4, wherein the microprocessor activates an alarm, if the bottom-out condition persists beyond a programmed time period ~~or activates an alarm if the over-inflation conditions persists beyond a programmed time period~~.

6. (Previously presented) The air cushion immersion control system according to claim 1, wherein the microprocessor manages a battery saver system that closes the air valve and deactivates the air cushion immersion control system if an adjustment button is activated without an occupant on a seat cushion connected to the air cushion immersion control system.

7. (Previously presented) The air cushion immersion control system according to claim 1, wherein the microprocessor controls the air pump to continue to operate for a designated period of time after the bottom-out sensors are no longer activated.

8. (Previously presented) The air cushion immersion control system according to claim 2, wherein the housing is comprised of a lower housing and an upper housing, wherein the lower housing is removably connected such that the lower housing may be interchanged with a second lower housing of a different size or a different design.

9. (Previously presented) The air cushion immersion control system according to claim 2, wherein the microprocessor manages a low voltage monitoring system for batteries that power the air cushion immersion control system, wherein the low voltage monitoring system will activate an alarm when a low voltage is detected and will confirm the correct installation of the batteries with a short audible alarm.

10. (Previously presented) The air cushion immersion control system according to claim 2, further comprising a silent LED light system or a visual read out display.

11. (Previously presented) The air cushion immersion control system according to claim 10, wherein the silent LED light system or the visual read out display signals a bottom-out condition, an overinflation, or that an adjustment process is occurring.

12. (Previously presented) The air cushion immersion control system according to claim 10, wherein the microprocessor reinstates an audible alarm if the silent LED light system or the visual read out display is disconnected.

13. (Previously presented) The air cushion immersion control system according to claim 10, wherein the LED light system or the visual read out display is plugged into the microprocessor.

14. (Previously presented) The air cushion immersion control system according to claim 10, wherein a pushbutton on the housing contains an LED light and actuating the pushbutton first turns on the LED light and again actuating the pushbutton activates an audible alarm system.

15. (Previously presented) The air cushion immersion control system according to claim 1, further comprising an adjustment button that when activated signals the microprocessor to open the air valve to release air from the air chamber sensor and the air cushion until a bottom-out condition is determined by contacting the bottom-out sensor which activates the microprocessor to close the air valve and activate the air pump.

16. (Previously presented) The air cushion immersion control system according to claim 1, further comprising an adjustment button that when activated signals the microprocessor to:

confirm with an audible sound that the adjustment button has been activated;

perform a timing sequence that measures a duration that an air cushion is in a bottom-out condition without an audible or a visible alarm being activated;

manage a battery saver system that closes the air valve and deactivates the air cushion control system if the adjustment button is activated without an occupant on a seat cushion connected to the air cushion immersion control system; or

control the air pump to continue to operate for a short period of time after the bottom-out sensors are no longer tripped.

17. (Currently Amended) The air cushion immersion control system according to claim 1, further comprising bottom-out sensors that when activated signal the microprocessor to:

perform a timing sequence that measures a duration that an air cushion is in a bottom-out condition without an audible or a visible alarm being activated;

~~perform a timing sequence that measures a duration that an air cushion is in an over inflated condition without an audible alarm or visible alarm being activated;~~

manage a battery saver system that closes the air valve and deactivates the air cushion immersion control system if the adjustment button is activated without an occupant on a seat cushion connected to the air cushion control system; or

control the air pump to continue to operate for a short period of time after the bottom-out sensors are no longer tripped.

18. (Previously presented) The air cushion immersion control system according to claim 1, wherein the microprocessor closes the air valve of the air cushion immersion control system after a programmed time delay if an adjustment process is activated without an occupant on a seat cushion connected to the air cushion immersion control system.

19. (Previously presented) The air cushion immersion control system according to claim 1, wherein the microprocessor closes the air valve of the air cushion control system after a programmed time delay if an adjustment process is activated by an increase in internal pressure in the air chamber sensor due to increased temperature, pressure, or altitude and the bottom out sensors have not been contacted.

20. (Currently Amended) The air cushion immersion control system according to claim 2, wherein the housing comprises: a bottom housing layer, a middle housing layer, and a top housing layer; and wherein the top housing layer is molded and comprises chases or ~~vias~~ voids for directing wiring and tubing and further comprises compartments ~~protrusions~~ to house the batteries, the air pump, and the air valve.

21. (Currently Amended) The air cushion immersion control system according to claim 20, wherein the middle housing layer is comprised of a thin material ~~thinner than the bottom housing layer and the top housing layer~~.

22. (Previously presented) The air cushion immersion control system according to claim 1, wherein the air cushion control system will automatically recognize an occupant by an air pressure activated switch and activates an adjustment procedure.

23. (Previously presented) The air cushion immersion control system according to claim 1, wherein the air cushion immersion control system will automatically recognize an occupant by an externally mounted strip sensor or a mechanical switch and activates an adjustment procedure.

24. (Currently Amended) An air cushion immersion control system comprising:

an air chamber sensor including an air chamber, a bottom out sensor and an overinflation sensor;

an air pump to inflate the air chamber, an air valve to release air from the air chamber;

means to connect the air chamber sensor of the air cushion control system to an air cushion;

~~wherein the air chamber sensor includes an~~ the air chamber formed by sealing together two layers of a material~~; wherein~~ , channel walls in the air chamber separateing the air chamber into multiple air channels~~; and~~ , the air channels extending throughout the length and width of the air sensor chamber~~; wherein~~ , the distance from an edge of the air chamber sensor to an end of the channel wall does not exceed one half of the distance between the channel walls; and

wherein the spacing of channel walls controls inflation height and air distribution within the air chamber sensor and the air cushion.

25. (Currently Amended) The air cushion immersion control system according to claim 24, wherein the end of the channel walls does not extend totally to the edge of the air chamber sensor.

26. (Currently Amended) The air cushion immersion control system according to claim 24, wherein a top layer of material is sealed to the first two layers~~;~~, ~~wherein~~ the top layer comprising a vent hole;

wherein a pocket layer is attached to the top layer and is capable of holding a sensor board, the sensor board holding a magnet; and

wherein the pocket layer aligns the magnet and sensor board ~~is aligned~~ with the bottom out sensor and the over inflation sensor.

27. (Currently Amended) The air cushion immersion control system according to claim 24, wherein the air chamber sensor has ~~perimeter~~ air connects on its side~~, lower air connects, or both perimeter air connects and lower air connects~~.

28. (Currently Amended) An air cushion immersion control system comprising:

an air chamber sensor including an air chamber, a bottom out sensor and an overinflation sensor;

an air pump to inflate the air chamber, an air valve to release air from the air chamber;

means to connect the air chamber sensor of the air cushion control system to an air cushion;

~~wherein~~ the air chamber sensor includesing an air chamber with multiple air channels, the air channels containing support strips.

29. (Currently Amended) The air cushion immersion control system according to claim 28, wherein the support strips are a foam material, a plastic material, ~~or~~ a combination thereof~~,~~ or any other hard material.

30. (Currently Amended) The air cushion immersion control system according to claim 28, wherein the support strips reduce the bleeding of air from the air chamber sensor back into the air cushion when the air cushion is unoccupied.

31. (Cancelled)

32. (Currently Amended) The air cushion immersion control system according to claim 28, wherein the air chamber sensor includes ~~an~~ the air chamber formed by sealing together two layers of material with multiple air channels that contain the support strips, wherein the support strips are capable of activating the bottom out sensor; and

~~wherein~~ a magnet ~~is~~ containeding ~~in the activation and~~ support strips ~~or wherein a pocket on a top layer of the two layers contains a magnet~~.

33. (New) The air cushion immersion control system according to claim 28, wherein the air chamber sensor includes the air chamber formed by sealing together two layers of material with multiple air channels that contain the support strips, wherein the support strips are capable of activating the bottom out sensor; and

a pocket on a top layer of the two layers containing a magnet.

34. (New) The air cushion immersion control system according to claim 1, wherein the microprocessor performs a timing sequence that measures a duration that the air cushion is in an over inflation condition without an audible or a visible alarm being activated.

35. (New) The air cushion immersion control system according to claim 34, wherein the microprocessor activates an alarm, if the over inflation condition persists beyond a programmed time period.

36. (New) The air cushion immersion control system according to claim 1, further comprising bottom-out sensors that when activated signal the microprocessor to:

perform a timing sequence that measures a duration that an air cushion is in an over inflated condition without an audible alarm or visible alarm being activated;

manage a battery saver system that closes the air valve and deactivates the air cushion immersion control system if the adjustment button is activated without an occupant on a seat cushion connected to the air cushion control system; or

control the air pump to continue to operate for a short period of time after the bottom-out sensors are no longer tripped.